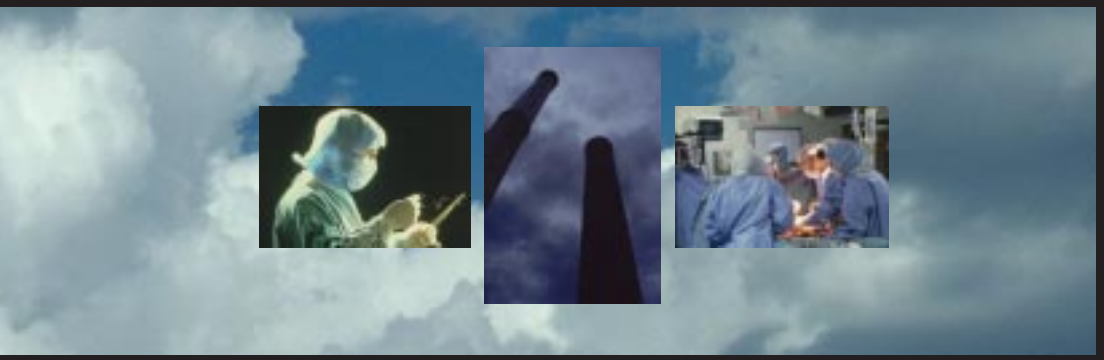

Air Quality Bureau
Iowa Department of Natural Resources
7900 Hickman Rd Suite 1
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New Rules for Hospital Medical Infectious Waste Incinerators

Air Quality Bureau
Environmental Protection Division
Iowa Department of Natural Resources

For decades, Iowans have come to hospitals for dependable medical care and to veterinarians for quality animal care. Now, hospitals and veterinarian clinics will help protect health in a different way. New efforts to control toxic hospital emissions will reduce or eliminate several types of incinerator practices. Other non-hospital facilities that burn hospital, medical or infectious waste may also be subject.

Just as hospitals and and vet clinics help Iowans with their health care needs, the Iowa DNR will work to assist hospitals and clinics with their regulatory compliance needs.

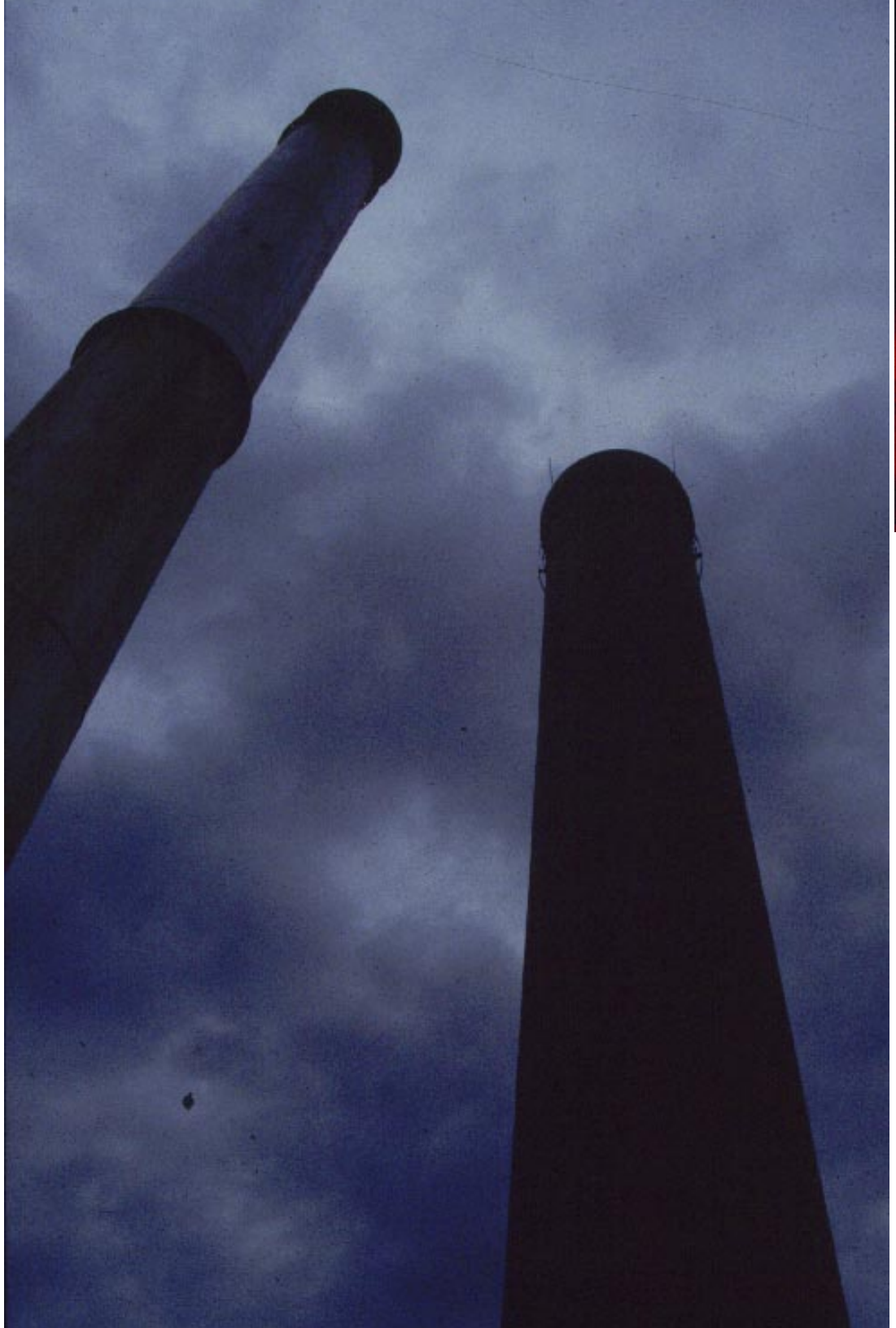
Background

In September 1997, the U.S. Environmental Protection Agency issued guidelines to control air emissions from existing hospital, medical and infectious waste incinerators (HMIWI). The guidelines directed states to carry out the regulations. To comply, the Iowa Department of Natural Resources Air Quality Bureau is adopting state regulations which are no more stringent than the federal requirements for units built on or before June 20, 1996. Units built after that date are considered new sources and require stringent "new source performance standards (NSPS)." New sources should contact DNR for more information.

Why Regulate Incinerators?

To reduce national toxic emissions — a Clean Air Act goal — the EPA issued emission guidelines for hospital incinerators. The nationwide results will be dramatic — 75 to 98 percent emission reductions.

To meet the emission limits, many hospitals may need to install scrubbers or find cost-effective incineration alternatives such as waste sterilization via autoclaving, microwaving or commercial waste disposal. The benefits are important improvements in protecting human health by reducing potent emissions



such as mercury, dioxin and hydrochloric acid.

What is Waste?

Waste is defined as *any* hospital waste except unused items returned to manufacturers and human remains sent to funeral homes and crematories. In short, most waste is subject. This includes red bag waste and other products that may differ little from common municipal waste such as paper, office supplies, cafeteria items and other refuse.

Must All Units Cut Emissions?

Not all units must meet the decreased emission levels. The emission guidelines do not apply when combusting only pathological, low-level radioactive or chemotherapeutic waste. Instead, records for these must be kept on-site and the DNR notified.

- Units that cofire 10 percent or less of hospital, medical or infectious waste with other fuels are exempt, but must notify the DNR and keep records of fuels and wastes fired. Ten percent is by weight on a calendar quarter basis and excludes pathological, low-level radioactive and chemotherapeutic wastes.

- Pyrolysis units are exempt. Ask DNR for the pyrolysis definition if you suspect you qualify.

- Cement kilns that fire hospital, medical or infectious wastes are exempt.

Less Stingency for Small, Remote Units

Small, remote hospitals have less stringent requirements if they burn less than 2,000 tons per week and are located more than 50 miles from the county line of a 50,000 population metro-area.

These units must use good combustion practices instead of additional control equipment.

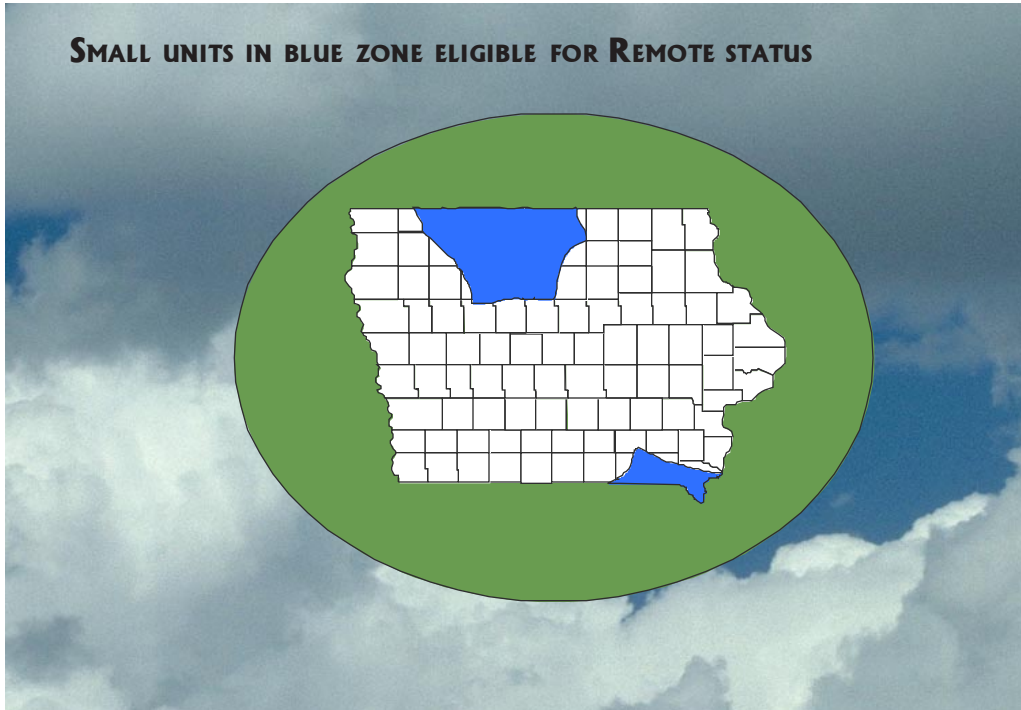
Refer to the map below that highlights Iowa's remote areas according to the definition.

Emission Limits & Permits

An incinerator designated size may be changed by establishing a maximum charge rate that is less than its design capacity. To do so, immediately contact DNR for assistance. DNR may help modify air construction permits to lower the charge rates. Sizes follow:

Small: < 200 lb/hr
Medium: > 200 to 500 lb/hr
Large: > 500 lb/hr

Title V operating permits are required for incinerators. They establish emission limits, testing, monitoring, inspections, reporting and record keeping.



The emission guidelines do not require specific control equipment — that decision is left to facility operators. Generally, wet scrubbers or dry carbon scrubbers will be used. Small units require low efficiency scrubbers, moderate efficiency scrubbers for medium units and high efficiency scrubbers for large units. In addition to emission limits, the emission guidelines establish a 10 percent opacity limit for all existing units, including remote hospitals.

Testing, Monitoring and Inspections

To meet the emission guidelines, all units, including remote hospitals, need to conduct initial stack testing for particulates, carbon monoxide, lead, cadmium, hydrochloric acid, mercury, dioxin/furan and opacity. For several pollutants, annual testing is required. If three, consecutive annual tests are passed, testing is waived for two years. Small remote incinerators have annual inspections instead of on-going, annual stack tests.

The emission guidelines require training and operator qualification including satisfactory completion of an operator training course. This requirement must be met within one year of EPA's approval of the DNR's plan for regulating HMIWI.

Reporting and Record Keeping

Records must thoroughly document performance tests, continuous monitoring, inspections and other items. Records must be kept on file for at least five years. All reports must be signed by the facility manager.

Quick Facts

- These are the first federal air emission standards and guidelines for HMIWI.
- EPA expects most HMIWI to end burning for on-site sterilization or commercial disposal.
- EPA estimates more than 90 percent annual emission reductions of particulate, dioxin/furan, mercury and hydrogen chloride.

Assistance Resources

- For federal rule text and fact sheets visit www.epa.gov/fedrgstr, search for HMIWI, or call DNR's Scott Vander Hart at 515-281-6061.
- For copies of "Medical Waste Incineration," a video that examines case studies of compliance methods call DNR's Brian Button at 515-281-7832
- New sources 40 CFR Part 60 Subpart Ec.
  Existing sources 40 CFR Subpart Ce

Emission limits based on source class and size

Pollutants and Units	New			Existing			Remote
	Small	Medium	Large	Small	Medium	Large	Remote
Particulates — milligrams per dscm	69	34	34	115	69	34	197
(grains per dscf)	0.03	0.015	0.015	0.05	0.03	0.015	0.086
Carbon Monoxide—ppm by volume	40	40	40	40	40	40	40
Dioxins/furans—Nanograms per dscm total dioxins/furans	125	25	25	125	125	125	800
(grains per billion dscf) or	55	11	11	55	55	55	350
nanograms per dscm TEQ[a]	2.3	0.6	0.6	2.3	2.3	2.3	15
(grains per billion dscf)	1.0	0.26	0.26	1.0	1.0	1.0	6.6
Hydrogen chloride — ppm by volume or	15	15	15	100	100	100	3100
percent reduction[b]	99	99	99	93	93	93	—
Sulfur dioxide— ppm by volume	55	55	55	55	55	55	55
Nitrogen oxides —ppm by volume	250	250	250	250	250	250	250
Lead— milligrams per dscm	1.2	0.07	0.07	1.2	1.2	1.2	10
(grains per thousand dscf) or	0.52	0.03	0.03	0.52	0.52	0.52	4.4
percent reduction	70	98	98	70	70	70	—
Cadmium— milligrams per dscm	0.16	0.04	0.04	0.16	0.16	0.16	4
(grains per thousand dscf) or percent reduction	0.07	0.02	0.02	0.07	0.07	0.07	1.7
Mercury— milligrams per dscm	0.55	0.55	0.55	0.55	0.55	0.55	7.5
(grains per thousand dscf) or	0.24	0.24	0.24	0.24	0.24	0.24	3.3
percent reduction	85	85	85	85	85	85	—

[a]Toxic equivalent quantity determined by international equivalency factors
[b]Percent reduction measured across control device